IN THE SPECIFICATION:

Page 1, please insert the following as the first paragraph:

This application is a U.S. National Phase Application under 35 USC 371 of International Application PCT/JP2004/010828 filed July 29, 2004.

Please replace the paragraph at page 2, lines 14-23, with the following amended paragraph:

In order to solve these problems, a prior art technology (see, for example, patent document 2) is disclosed, in which the charge carried by ink droplets is released in a stepwise manner by reducing surface resistance of a substrate to restrain the continuously reaching ink droplets from being scattered by an electric field, by using a substrate having an ink receiving layer or supporting member that contains a tetra-ammonium salt type conductive agent and has a surface resistance of 9×10^{11} ~~Ω~~ Ω/cm^2 or less at 20 degrees centigrade and 30% RH.

Please replace the paragraph at page 22, lines 5-12, with the following amended paragraph:

By setting an upper limitation value of the ejection voltage as above, ejection control can be made easier, and improvement of accuracy by improvement of durability of the apparatus and implementation of safety measures can be easily attained. ~~(5) In the structure described in each of the aforementioned inventions, or in the aforementioned structure of (1), (2), (3) or (4),~~

~~applied ejection voltage is preferably 500 V or less.~~

(5) In the structure described in each of the aforementioned inventions, or in the aforementioned structure of (1), (2), (3) or (4), applied ejection voltage is preferably 500 V or less.

Please replace the paragraph at page 43, lines 13-24, with the following amended paragraph:

As for surfactant of small molecular weight, concerning non-ionic agents, glycerine fatty acid ester, ~~glycerine fatty acid ester,~~ poly oxyethylene, poly oxyethylene, alkyl ether, alkyl poly oxyethylene, phenyl ether, N,N-bis(2-hydroxyethyl), alkyl amine (alkyl di-ethanol amine), N-2-hydroxyethyl-N-2-hydroxyalkyl amine (hydroxyalkyl monoethanolamine), poly oxyethylene alkyl amine, ~~poly oxyethylene,~~ alkyl amine fatty acid ester, alkyl diethanolamide, alkyl sulfonium salt, alkylbenzene sulfonium salt, alkyl phosphate, tetraalkylammonium salt, trialkylbenzyl, ammonium salt, alkyl betaine, alkyl imidazolium betaine, and the like can be mentioned.

Please replace the paragraph at page 44, line 22 through page 45, line 5, with the following amended paragraph:

As for insulative materials, shellack, ~~Japanese lacquer,~~ phenolic resin, urea resin, polyester, epoxy, silicone, polyethylene, polystyrol, flexible vinyl chloride resin, hard vinyl chloride resin, cellulose acetate, polyethylene terephthalate, Teflon (trademark), crude caoutchouc, flexible rubber, ebonite, butyl rubber, neoprene, silicone rubber, white

mica, Japanese lacquer, micanite, micarex, asbestos board, porcelain, steatite, alumina porcelain, titanium oxide porcelain, soda glass, bolosilicate glass, silica glass, and the like can be used.

Please replace the paragraph at page 52, lines 8-16, with the following amended paragraph:

An ejection voltage applying unit 35 includes an ejection electrode 58 provided at a boundary position between the solution chamber 54 and the flow passage 52 inside the liquid ejection head 56 for applying ejection voltage, a bias voltage supply 30 for constantly applying DC bias voltage to the ejection electrode 58, and an ejection voltage supply 31 for applying to the ejection electrode ~~28~~ 58 a pulse voltage necessary for ejection with superposition on the bias voltage.

Please replace the paragraph at page 55, lines 3-24, with the following amended paragraph:

The nozzle plate ~~108~~ 56c including the nozzle 51 may have water repellency (for example, the nozzle plate ~~108~~ 56c is formed of resin containing fluorine), or may be formed of a water-repellent film having water repellency at a surface layer of the nozzle 51 (for example, the surface layer of the nozzle plate 108 is formed of a metal film, and formed over the metal film is a water repellent layer by eutectoid plating with metal and water repellent resin). Here, the water repellency is a characteristic of repelling liquid. By selecting a water-repellent processing method according to liquid, water

repellency of the nozzle plate ~~108~~ 56c can be controlled. As water-repellent processing methods, electrodeposition of cationic or anionic fluorine-containing resin, topical application of fluoropolymer, silicone resin, poly dimethylsiloxane, sintering method, eutectoid deposition of fluoropolymer, vapor deposition of amorphous alloy plating film, adhesion of organic silicone compounds, fluorine-containing organic silicone compounds, and the like, that are mainly made of poly dimethylsiloxane, which is obtained through plasma polymerization of plasma CVD method, where the monomer used is hexamethyl disiloxane, can be mentioned.

Please replace the paragraph at page 62, lines 1-16, with the following amended paragraph:

As for minute particles, particles of metal and metal compounds can be used. As for the fine particles, electrically conductive fine particles such as Au, Pt, Ag, In, Cu, Ni, Cr, Rh, Pd, Zn, Co, Mo, Ru, W, Os, Ir, Fe, Mn, Ge, Sn, Ga, ~~In~~, and the like can be mentioned. Especially when metal fine particles of Au, Ag, or Cu is used, it is preferable since electrical circuit with low electrical resistance and high corrosion resistance can be achieved. As for fine particles of metal compounds, electrically conductive fine particles such as ZnS, CdS, Cd_2SnO_4, ITO(In_2O_3-SnO_2), RuO_2, IrO_2, OsO_2, MoO_2, ReO_2, WO_2, $YBa_2Cu_3O_7$-x, and the like, fine particles that show electrical conductivity through reduction by heat such as ZnO, CdO, SnO_2, InO_2, SnO_4, and the like, semiconductive fine particles such as Ni-Cr, Cr-SiO, Cr-MgF, Au-SiO_2, AuMgF, $PtTa_2O_5$, $AuTa_2O_5Ta_2$, Cr_3Si, $TaSi_2$, and the

like, conductive fine particles such as $SrTiO_3$, $BaTiO_3$, $Pb(Zr,Ti)O_3$, and the like, and semiconductive fine particles such as SiO_2, Al_2O_3, TiO_2, and the like can be mentioned.

Please replace the paragraph at page 70, line 23 through page 71, line 11, with the following amended paragraph:

The surface potential of the insulative substrate 102 is that measured by an electrostatic voltmeter before the steady voltage applying part 104a applies the steady voltage V_s to the ejection electrode 58. Waveforms of the steady voltage, applied by the steady voltage applying part 104a, are shown in FIGS. 19A and 19B. In FIGS. 19A and 19B, ~~horizontal~~ vertical axis indicates the voltage applied to the ejection electrode 58, and ~~vertical~~ horizontal axis indicates the time elapsed from voltage application to the ejection electrode 58. When the steady voltage, as shown in FIGS. 19A and 19B, is applied by the steady voltage applying part 104a, an electric field is produced, which causes the surface 102a of the substrate 102 to be charged. Meanwhile, in FIG. 18, a positive and negative direction of the steady voltage applying part 104a may be reversed.

Please replace the paragraph at page 76, line 23 through page 77, line 6, with the following amended paragraph:

In the graph of FIG. 22A, the maximum value of the voltage V(T) is (bias voltage V_1 + pulse voltage V_2) and the minimum value is V_1, and (bias voltage V_1 + pulse voltage V_2 - middle value V_{mid}) is larger than (bias voltage V_1- middle value V_{mid}). In

the graph of FIG. 22B, the maximum value of the voltage V(T) is the bias voltage V_1 and the minimum value is (bias voltage V_1 + pulse voltage V_2), and (middle value V_{mid} - bias voltage V_1 - pulse voltage V_2) is larger than (middle value V_{mid} - bias voltage V_1).

Please replace the paragraph at page 87, lines 3-22, with the following amended paragraph:

As shown in FIG. 26, the liquid ejection mechanism 501 also includes the liquid ejection head 56, and further includes an electrostatic voltmeter 512 as a detecting unit having a probe 511 for detecting the potential of each point on the surface 102a of the substrate 102, a signal generator 513 for outputting a pulse signal to apply a pulse voltage to the ejection electrode 58 of the ejection head 56, an amplifier 514 for amplifying the pulse signal output from the signal generator 513 by a given factor to apply to the ejection electrode 58, a controller 515, and a moving mechanism (not shown) for positioning the probe 511 to a plurality of positions to be sampled on the surface 102a of the substrate 102, the controller 515 for controlling the signal generator 513 to supply a voltage of a signal waveform thereto, at least a part of the voltage value of the signal waveform satisfying the voltage V_S (V) of the ~~following~~ aforementioned expression (A), assuming that the maximum value and the minimum value of the surface potentials of the insulative substance, detected by the electrostatic voltmeter 512, are V_{max} (V) and V_{min} (V), respectively.

Please replace the paragraph at page 91, lines 3-8, with the following amended paragraph:

According to the test described above, it has been observed that; when the surface resistance is reduced to 109 O/cm2, the deviation rate is abruptly reduced (1/3 or less of that for $10^{\cancel{9}\underline{10}}$ Ω/cm^2), and with less surface resistance than this, the deposited diameter is remarkably stabilized.

Please replace the paragraph at page 94, lines 19-21, with the following amended paragraph:

In the test, the bias voltage V1 was continuously kept applied to the ejection electrode, and the ~~bias voltage V_1~~ pulse voltage V_2 was superposed only at the time of ejection instantaneously.

Please replace the paragraph at page 98, lines 15-25, with the following amended paragraph:

By setting the voltage V_S to conditions shown in Table 2, the voltage V_S being applied by the steady voltage applying part 104a of the ejection voltage applying unit with charging unit 104, liquid was ejected from the nozzle 110 toward the glass board, and a line of liquid was patterned on the surface of the glass board with the nozzle 110 moved. As in the applied example ~~1~~ 4, the deviation of widths of the line patterned on the surface of the glass board was measured. The deviation of widths of the line is also shown in Table 2. $V_S/V|_{max-min}|$ was also obtained and shown in Table 2.

Please replace the paragraph at page 99, line 21 through page 100, line 5, with the following amended paragraph:

Next, using an electrostatic voltmeter as in the applied example ~~1~~4, the surface potential at each point within the surface of the glass board used as the substrate 102 was measure to obtain the surface potential distribution. As a result, a maximum value V_{max} out of the surface potentials of the glass board was 70 V, a minimum value V_{min} was -20 V, the middle value V_{mid} was 25 V, and the potential difference $V|_{max-min}|$ was 90 V.

Please replace the paragraph at page 102, line 21 through page 103, line 11, with the following amended paragraph:

By setting the bias voltage V_1 and the pulse voltage V_2 to each condition shown in Table 4, the voltage V_1 being applied by the steady voltage applying part 204a of the ejection voltage applying unit with charging unit 204, and the voltage V_2 being applied by the pulse voltage applying part 204b, the pulse voltage V_2 was repeatedly applied 250 times with the nozzle 110 moved, whereby liquid as a droplet was ejected 250 times from the nozzle 110 toward the glass board to form a pattern on the surface of the glass board with droplet dots. The deviation rate of diameter of dots patterned on the surface of the glass board was obtained as in the applied example ~~3~~ 6. The deviation rate of dot diameters is also shown in Table 4. There is also obtained and shown in Table 4 a ratio of an absolute value of a maximum value of the voltage or an absolute value of a minimum value (namely, $|V_1|$ or $|V_1+V_2|$) to $V|_{max-min}|$ (namely, $|V_1+V_2|/ V|_{max-min}|$).